

The SPICA Mission and the MIR-coronagraph for SPICA

Keigo Enya (nya at ir.isas.jaxa.jp), ISAS/JAXA
Shinichiro Tanaka, Univ. of Tokyo, Japan
Lyu Abe, NAOJ
Takao Nakagawa, ISAS/JAXA
Hirokazu Kataza, ISAS/JAXA
Olivier Guyon, SUBARU/NAOJ
Melanie Venet, Univ. of Nice, France
Takashi Miyata, IoA, Univ. of Tokyo, Japan
Shigeyuki Sako, IoA, Univ. of Tokyo, Japan
Naoshi Murakami, NAOJ
Jun Nishikawa, NAOJ
Motohide Tamura, NAOJ
Kenta Fujita, Univ. of Kobe, Japan
Yoich Itoh, Univ. of Kobe, Japan
SPICA working group

We introduce the Space Infrared Telescope for Cosmology and Astrophysics (SPICA) mission and the mid-infrared coronagraph for SPICA. SPICA is the next generation mission of space telescope for infrared astronomy following to AKARI. 3.5 m telescope will be cooled down to 4.5 K for observation at 5-200 micron wavelength. The launch of the SPICA is planed to be middle of 2010th. We are developing an mid-infrared coronagraph for the SPICA mission. First, binary pupil masks were studied as a safe solution because of their robustness. Laboratory experiment with the checkerboard-type binary masks were performed using visible light. Achieved contrast averaged in the dark region of the point spread function was 1.1×10^{-7} without wave front control. Study of Phase induced amplitude apodization (PIAA) and Prolate Apodized Lyot Coronagraph (PALC) are undergoing for challenging solutions. We are developing cryogenic tip-tilt mirror system and deformable mirror for SPICA.